

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte PAUL A. MEDWICK,  
RUSSELL C. CRISS, Dec'd,  
MEHRAN ARBAB  
and  
JAMES J. FINLEY

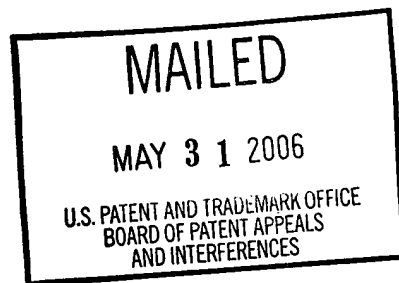
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Appeal No. 2006-1459  
Application No. 09/714,166

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ON BRIEF

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Before KIMLIN, WALTZ and FRANKLIN, Administrative Patent Judges.

KIMLIN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1, 3-18, 20-28 and 32-48, all the claims remaining in the present application. Claim 1 is illustrative:

1. A solar control article, comprising:

a substrate having a surface;

a coating over the surface to provide a coated article having a visible light transmittance in the range of about 50 to about 70%, a shading coefficient less than about 0.33 and a reflectance less than about 30%, the coating comprising:

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a first antireflective layer over at least a portion of a substrate surface;

a first infrared reflective layer over at least a portion of the first antireflective layer;

a second antireflective layer over at least a portion of the first infrared reflective layer;

a second infrared reflective layer having a thickness ranging from 159 to 257 angstroms over the second antireflective layer; and

a third antireflective layer having a thickness ranging from 60 to 273 angstroms over the second infrared reflective layer.

The examiner relies upon the following references as evidence of obviousness:

Yudenfriend	4,489,134	Dec. 18, 1984
Zagdoun et al. (Zagdoun)	5,776,603	Jul. 7, 1998
Arbab et al. (Arbab)	5,821,001	Oct. 13, 1998
Boire et al. (Boire)	6,045,896	Apr. 4, 2000

The present application, directed to a solar control article comprising first, second and third antireflective layers and first and second infrared reflective layers, is related to U.S. Serial No. 09/945,892. The related application is a Continuation-In-Part of the present application, and an appeal was taken to this Board in the related application (Appeal No. 2006-1002). In a decision dated April 20, 2006, the Board

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sustained the examiner's rejections under 35 U.S.C. § 103 of claims directed to subject matter similar to that presently on appeal.

The appealed claims stand rejected under 35 U.S.C. § 103 as follows:

- (a) claims 1, 3-18, 20-25, 27, 28 and 32-48 over Boire,
- (b) claims 26, 46 and 47 over Boire in view of Arbab,
- (c) claims 40 and 41 over Boire in view of Zagdoun,
- (d) claim 44 over Boire in view of Yudenfriend,
- (e) claims 1, 3-18, 20-28, 32-39 and 43-48 over Arbab,
- (f) claims 40 and 41 over Arbab in view of Zagdoun, and
- (g) claim 44 over Arbab in view Yudenfriend.

Appellants have not set forth separate substantive arguments for any particular claim on appeal, relying for the most part on the asserted deficiencies of the applied references with respect to independent claim 1. Accordingly, all the appealed claims stand or fall together with claim 1 as separately rejected over Boire and Arbab.

We have carefully considered each argument presented by appellants. However, we are in full agreement with the examiner's legal conclusion that the claimed subject matter would have been obvious to one of ordinary skill in the art within

the meaning of Section 103 in view of the applied prior art. Accordingly, we will adopt the examiner's reasoning as our own in sustaining the rejections of record, and we add the following for emphasis only.

Concerning the Section 103 rejection over Boire, there is no dispute that Boire, like appellants, discloses a solar control article comprising first, second and third antireflective layers and first and second infrared reflective layers wherein the article has a visible light transmittance of from 50 to 85%, which totally encompasses the claimed range of 50 to about 70%, and a reflectance less than 20%, which falls within the claimed range of less than about 30%. Although Boire discloses a thickness range for the third antireflective layer that overlaps the claimed range, Boire does not disclose the claimed range of thickness for the second infrared reflective layer. However, inasmuch as appellants have not refuted the official notice taken by the examiner that it was known in the art that an increase in the thickness of an infrared reflective layer increases its reflectance while decreasing the transmittance of the coating, the examiner is on sound footing in concluding that it would have been obvious for one of ordinary skill in the art to modify the thickness of Boire's second infrared reflective layer to obtain a

coating of higher reflectance and lower transmittance. Also, as set forth in the Board's decision in the related application, U.S. Serial No. 09/945,892, it was known in the art that the thicknesses of various layers in solar control articles of the type disclosed by Boire and presently claimed is limited primarily by the particular optical properties desired.

Appellants contend that "it seems implausible to conclude the Boire discloses or teaches the result effective capability of a combination of a second infrared reflective layer having a specified thickness and a third antireflective layer having a specified thickness like the present invention when Boire does not disclose the interrelation between the ranges of the infrared reflective layer and the resulting properties of the coating" (sentence bridging pages 8 and 9 of brief). However, the result effective relationship between the thickness of the layers and their reflectance/transmittance was known in the art, and appellants have not established on this record that the relationship in the claimed solar control article would have been considered truly unexpected by one of ordinary skill in the art. In re Merck & Co., 800 F.2d 1091, 1099, 231 USPQ 375, 381 (Fed. Cir. 1986). Furthermore, it is well settled that where patentability is predicated upon a change in a condition of a

prior art article or composition, such as a change in thickness or concentration, the burden is on the applicant to establish with objective evidence that the change is critical, i.e., it leads to a new, unexpected result. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990); In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). In the present case, as noted above, appellants have proffered no such evidence. Bare assertions of beneficial results are no substitute for objective evidence of unexpected results. In re Pearson, 494 F.2d 1399, 1405, 181 USPQ 641, 646 (CCPA 1974).

Regarding the rejection over Arbab, the issues are essentially the same. For instance, while Arbab exemplifies a thickness for the second infrared reflective layer that is somewhat outside the claimed range, the examiner properly notes that Arbab teaches that "the second infrared reflective layer thickness may be varied to obtain the desired color and emissivity of the product, as well as manufacturing related issues (column 20, lines 24-31)" (page 10 of answer, second paragraph). Indeed, Arbab teaches the goal of Example 3 was to produce a neutral appearing color but that "[b]y adjusting

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thicknesses in any of the three dielectric layers and the two silver layers, it is possible to produce an entire pallet of colors" (column 20, lines 27-29). Accordingly, as stated above, we find that it would have been obvious for one of ordinary skill in the art to tailor the thicknesses of the antireflective and infrared reflective layers in accordance with the desired transmittance of the article.

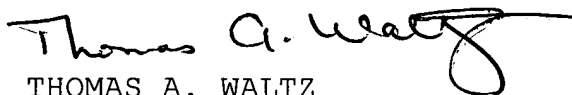
In conclusion, based on the foregoing and the reasons well-stated by the examiner, the examiner's decision rejecting the appealed claims is affirmed.

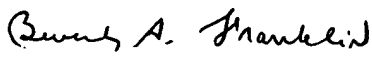
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No time period for taking any subsequent action in  
connection with this appeal may be extended under 37 CFR  
§ 1.136(a).

AFFIRMED

  
EDWARD C. KIMLIN )  
Administrative Patent Judge )

  
THOMAS A. WALTZ )  
Administrative Patent Judge )

  
BEVERLY A. FRANKLIN )  
Administrative Patent Judge )

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